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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
SPAFFORD, TIMOTHY J

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2662	4

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/206,277	Applicant(s) SYLVAIN ET AL.	
	Examiner Tim Spafford	Art Unit 2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 December 1998* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Allen, Jr. et al. (USPN 6,169,735).

3. Referring to claim 1, Allen Jr. et al. show, in figure 4, a hybrid central office (combination of 20 and 30) for serving a plurality of subscriber lines (19) while serving as a virtual access tandem to a subnetwork of central offices (10 and 22) having a connection to an ATM backbone network (26) comprising:

an inter-working bearer traffic interface (28) to the ATM backbone network (26) to permit the hybrid central office (20, 30) to receive bearer traffic from and transfer bearer traffic to any of the central offices in the subnetwork, the inter-working bearer traffic

interface being adapted to convert pulse code modulated data to ATM cells and vice versa (column 6 lines 51-57);

a trunk interface to the public switched telephone network (PSTN) to permit the hybrid central office to receive PCM data from and transfer PCM data to the PSTN (column 7 lines 64 thru column 8 line 9); and

a computing module (30 co-located with 20 as explained in column 13 lines 27-54) having a signaling interface to the ATM backbone network (26) to permit the computing module (30) to send messages to and receive messages from any one of a plurality of distributed-access bearer traffic interfaces respectively associated with the central offices in the subnetwork, the computing module being adapted to access information for routing inter-office calls originated at or terminated at any one of the central offices (column 12 lines 23-63).

4. Referring to claim 2, Allen Jr. et al. show, in figure 5, a hybrid central office (20) wherein the computing module (30) is adapted to send control messages through the signaling interface to the distributed-access bearer traffic interfaces respectively associated with the first and second central offices in the subnetwork to initiate the setup of connections through the ATM backbone network to complete an inter-office call without routing the call through the inter-working bearer traffic interface (column 12 lines 22-40).

5. Referring to claim 3, Allen Jr. et al. show, in figure 5, a hybrid central office (20) wherein the computing module (30) is adapted to receive ISDN User Part (ISUP) messages associated with the inter-office call and to modify the ISUP messages and

forward the modified ISUP messages to an appropriate one of the first and second central offices so that the ATM backbone network is transparent to other central offices in the subnetwork (column 14 lines 47 thru column 15 line column 15 line 29).

6. Referring to claim 4, Allen Jr. et al. show, figure 3, a hybrid central office wherein the computing module is adapted to modify the ISUP messages by changing the an originating point code (OPC) and a destination point code (DPC) in each message and replacing a circuit identification code (CIC) associated with an originating end of the inter-office call to a CIC associated with a terminating end of the interoffice call, or vice versa (column 14 lines 47 thru column 15 line column 15 line 29).

7. Referring to claim 5, Allen Jr. et al. show a hybrid central office wherein the inter-working bearer traffic interface supports bridges across the switch fabric of the hybrid central office for calls that originate in the PSTN and terminate at one of the central offices in the subnetwork or originate at one of the central offices and terminate in the PTSN (column 15 lines 36-43).

8. Referring to claim 6, Allen Jr. et al. show a hybrid central office wherein the inter-working bearer traffic interface is adapted to generate an application instance for each of the bridges across the switch fabric of the hybrid central office (column 15 lines 36-43).

9. Referring to claim 7, Allen Jr. et al. show a hybrid central office wherein the inter-working bearer traffic interface is adapted to terminate cached switched virtual circuits (SVCs) used to support calls that originate in the PSTN and terminate at one of the

central offices or originate at one of the central offices and terminate in the PSTN (column 11 lines 6-25).

10. Referring to claim 8, Allen Jr. et al. show, in figure 4, a telephone subnetwork which utilizes an ATM backbone (26) for completing switched telephone calls, comprising in combination:

a plurality of central offices (20, 22) connected to the ATM backbone (26) by respective interfaces (28) for converting PCM data to ATM cells and vice versa (column 6 lines 51-57), each of the central offices being respectively adapted to serve a plurality of subscriber lines (19 and 23); and

one of the plurality of central offices being further adapted to function as a virtual tandem for the subnetwork (combine 30 with 20) and to control inter-office call routing for calls that originate or terminate in the subnetwork (column 6 lines 30-42).

11. Referring to claim 9, Allen Jr. et al. show, figure 5, a telephone subnetwork wherein the central office is adapted to function as a virtual tandem comprises:

a computing module (30) having a signaling interface to the ATM backbone (26), the computing module being adapted to perform translation and routing functions in the subnetwork (column 12 lines 22-40);

to select an inter-working bridge for calls originating in the PTSN and terminating in the subnetwork or originating in the subnetwork and terminating in the PSTN (column 8 lines 23-39);

to send fabric control messages to the interfaces in the network to effect control of ATM circuits for transferring inter-office calls through the subnetwork (column 8 lines 10-22);

a trunk connection to the PSTN to permit completion of calls that originate in the PSTN and terminate in the subnetwork or originate in the subnetwork and terminate in the PSTN (column 7 line 64 thru column 8 line 9); and

an interface (28) to the ATM backbone adapted to support application instances that are associated with the inter-working bridges, a connection broker for controlling TDM-to-ATM bearer path conversions and inter-working control, and a messaging connectivity function to perform TDM-to-ATM address mapping (column 15 lines 29-43).

12. Referring to claim 10, Allen Jr. et al. show, in figure 5, a telephone subnetwork wherein each of a plurality of central offices (20,22) in the subnetwork is connected to the ATM backbone (26) by a single large trunk group (column 8 lines 51-57) and all inter-office calls originated at the respective central offices, except for the one adapted to function as the virtual tandem, are routed to the respective single trunk groups (column 11 lines 6-25).

13. Referring to claim 11, Allen Jr. et al. show a telephone subnetwork wherein the computing module (30) has access to routing information to enable the virtual tandem to route all inter-office calls that originate or terminate within the subnetwork and the fabric control messages contain origination and termination addresses as well as connection mapping information to enable the interfaces to map a virtual circuit used to transfer a call through the ATM backbone network to respective originating and terminating trunk

members in the respective single large trunk groups (column 14 line 47 thru column 15 line 64).

14. Referring to claim 12, Allen Jr. et al. show a telephone subnetwork wherein the virtual circuits used to transfer calls through the ATM backbone are switched virtual circuits (column 11 lines 6-25).

15. Referring to claim 13, Allen Jr. et al. show a telephone subnetwork wherein the SVCs are cached SVCs, idle SVCs being stored in a cache and used for calls on an on-demand basis (inherent in ATM networks that use SVCs).

16. Referring to claim 14, Allen Jr. et al. show a telephone subnetwork wherein cached SVCs used for calls between the central offices and the virtual tandem are terminated on the virtual tandem but the SVC cached are managed by the respective interfaces associated with the central offices, rather than the interface associated with the virtual tandem (column 15 lines 7-13).

17. Referring to claim 15, Allen Jr. et al. show a telephone subnetwork wherein the central office that serves as the virtual tandem also supports a trunk group connected to the PSTN and calls that originate in the subnetwork and terminate in the PSTN are routed to the trunk group connected to the PSTN (column 1 lines 15-26).

18. Referring to claim 16, Allen Jr. et al. show, in figure 6, a method of completing an inter-office call originating at a central office (20) in a subnetwork that includes a plurality of central offices (10, 22) which respectively serve a plurality of subscriber lines (19, 23), each of the central offices being connected to an ATM backbone network (26) by an interface that converts PCM data to ATM cells and vice versa (28), one of the

central offices (combination of 20, 28, 30 and 18) serving as a virtual tandem for the subnetwork, comprising the steps of:

a) at the originating central office, formulating an IAM relating to the inter-office call, the IAM containing a destination point code of the virtual tandem (column 14 lines 47-62);

b) receiving the IAM at the virtual tandem and translating a called number in the IAM to determine a next hop destination for the call (column 14 line 62 thru column 15 line 6);

c) modifying the IAM to change an originating point code to the point code of the virtual tandem and the destination point code to the point code of the next hop destination in the call, and forwarding the modified IAM to the next hop destination for the call (column 15 lines 7-20);

d) formulating a fabric control message and sending the fabric control message through the ATM backbone to a terminating interface in the subnetwork to enable a virtual circuit through the ATM backbone to transfer the call (column 15 lines 14-20); and

e) sending a connection message from the terminating interface in the subnetwork to an interface associated with the originating central office to enable the virtual circuit for transferring the call through the ATM backbone (column 15 lines 21-43).

19. Referring to claim 17, Allen Jr. et al. show a method wherein the call terminates at a central office in the subnetwork and the terminating interface to which the fabric

control message is sent in step d) is an interface associated with the terminating central office, the virtual circuit being enable through the ATM backbone directly between the interface associated with the originating central office and the interface associated with the terminating office (column 15 lines 36-43).

20. Referring to claim 18, Allen Jr. et al. show a method wherein the virtual circuit that is enabled is an SVC (column 11 lines 6-25) that is idle and stored in a cache (inherent in an ATM system using SVCs).

21. Referring to claim 19, Allen Jr. et al. show a method wherein the call terminates at a central office in the PSTN, the next hop destination for the call to which the modified IAM is forwarded in step c) is in the PSTN; the terminating interface to which the fabric control message is sent in step d) is an interface associated with the virtual tandem (column 17 lines 25-45); and

the virtual circuit enabled through the ATM backbone in step e) is an SVC enabled between the interface associated with the originating central office and an interface associated with the virtual tandem (column 15 lines 36-43).

22. Referring to claim 20, Allen Jr. et al. show a method further including the steps of:

establishing an inter-working bridge between the terminating interface and a TDM peripheral associated with a trunk connecting the virtual tandem to the access tandem (column 15 lines 36-64); and

managing the inter-working bridge for the duration of the call (column 8 lines 10-22).

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Barzegar et al. (USPAP 2001/0028644) discloses a multifunction interface facility connecting wideband multiple access subscriber loops with various networks.

b. Wei et al. (USPAP 2002/0010818) discloses a combination analog and digital modem.

c. Steinka et al (USPN 6,285,680) discloses a central cite call routing apparatus and method.

d. Liu et al. (USPN 6,349,096) discloses a end-to-end data and analog voice connection system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tim Spafford whose telephone number is (703) 306-4820. The examiner can normally be reached on 7:30 - 4:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (703) 305-4744. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to customer service whose telephone number is (703) 306-0377.

tjs
February 28, 2002

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